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# VOLUME 50 | NUMBER 2

# DIRTSPORTS

## +Off-Road



### ON THE COVER

More than 125 vintage Broncos snaked their way toward the Oregon Dunes National Recreation Area just south of the little seaside town of Florence.

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# BUSY TIMES AHEAD

**A**s I write this, fall is only a few days away and that means it's going to be a busy couple of months heading our way. The second half of the D37 Grand Prix racing season is starting up, SEMA is just around the corner, and then it's off to the Baja 1000. We're also hoping to get a few UTV tests in during that time, especially the new Yamaha YXZ 1000R SE, which is debuted in this issue.

Fall is always my favorite time of the year to ride. After the heat of the summer, it's nice to have a little chill in the air. Combine that when a little rain has fallen and the conditions are usually perfect. Like many of you, I go with the family to the local riding areas, and it's so much nicer when the weather is nice. I'll go riding pretty much anytime (OK, no rain though), but I'm finding as I get older my tastes run more toward the mild, weather-wise.

We have a few cool things in this month's issue, but the Yamaha YXZ reveal coverage is really the biggie. The YXZ is a potential game changer for the sport side of UTVs. We are working to get one to test, so we hope that we'll be able to bring you the full story soon. That means video too, though we'll try not to wad it up in front of the camera. That'd be embarrassing.

There's also a couple of neat features: one is on riding the Continental Divide Trail from Canada to the Mexican border, and the other is on a Bronco run in the sands of Oregon. We've been past that section of Highway 101, and it sure looked like a fun place to wheel.

You may notice that there is a Masterpiece in Metal feature in this issue. We haven't had one in a while, but the Geiser truck is too good to pass up. We'll have more MIMs in the future, but only on vehicles that we feel are worthy of the effort and expense it takes to get a shoot like this done.

So that's it for this month. Be sure to stay tuned into the *Dirt Sports + Off-Road* Facebook page for our daily videos.

**Matt Emery**

[MEmer@enthusiastnetwork.com](mailto:MEmer@enthusiastnetwork.com)



IMAGE BY DEANNA SCANLON

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**KMC XD**  
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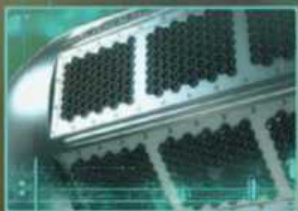


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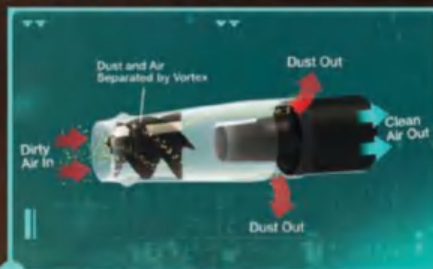


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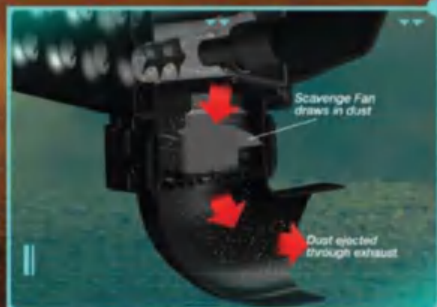
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## Coming Soon

We will be releasing Particle Separators for most of the other UTVs, so check our website for details.



## BMF WHEELS BECOMES SOTA OFFROAD

**B**MF Wheels, the industry leader in aftermarket wheels for lifted and leveled trucks and the originator of the black and milled "Death Metal" finish, is excited to announce that it is changing the name of their brand and company to SOTA Offroad.

This change is due in part to a litigation that has been ongoing since the summer of 2011 when BMF Wheels was sued in federal court by CFE Racing, a manufacturer of racing engine heads. After a jury trial in 2013 the judge ruled that if BMF Wheels changed its logo and used a disclaimer, then it could keep its trademark and could keep making wheels under the BMF Wheels mark. BMF Wheels fully complied with this ruling. Recently, however, an appellate court overturned this finding, ruling that BMF Wheels was required to use a mark that did not contain BMF. While BMF



Wheels strongly disagrees with this decision, it has decided to change the name of the company to SOTA Offroad in an effort to move forward with its business. Blake Ramthun, one of the founders of BMF Wheels, said, "In a word this whole legal process has been unbelievable. We find it hard to believe that anyone would think that our products are even remotely related to racing cylinder heads, but it's time to move forward."

Although BMF Wheels is changing its name, it will remain committed to providing the highest quality products for its customers. Brock Weld, one of the founders of BMF Wheels, said, "Our highest priority is with our customers and making amazing products for them to express their specific lifestyle. It is

time for us to focus all of our attention on that alone." All of the current designs of BMF Wheels will stay the same but will simply be re-branded as SOTA Offroad. SOTA was the name of the first design of BMF Wheels and was the logical choice for this transition. The current design of the SOTA name will be renamed to S.K.U.L. and SOTA Offroad will continue to offer the Novakane, F.I.T.E., REHAB, B.A.T.L., BRAWL, A.W.O.L., M-80, and R.E.P.R., and the Pro-Series bead-loc designs, SSD & DRT. SOTA Offroad has just finished adding another production facility to keep up with customer orders and demand for these designs. This new facility will significantly improve overall capacity and product availability.

## VILDOSOLA WINS SCORE IMPERIAL VALLEY 250


**M**exico's Gus Vildosola Jr. started First, overcame racing maladies and in the end benefitted from some racing good fortune on a blistering desert race course to capture the Overall and SCORE Trophy Truck victory at the internationally televised Rigid Industries SCORE Imperial Valley 250, presented by the City of El Centro, California.

Back in SoCal for the third time in

two years, Round 4 of the five-race 2015 SCORE World Desert Championship was held just west of El Centro, California, and approximately 100 miles east of San Diego. Pro and Sportsman classes for cars, trucks, UTVs, motorcycles, and quads raced in the event. They came from 17 U.S. States and four countries and endured temperatures that approached 110 degrees F.

In earning his second overall race win

of the year and his fifth career win in the marquee SCORE Trophy Truck division, Vildosola Jr. covered a three-lap race over a grueling and scorching desert course of approximately 96.1 miles for a total race distance of 288.3 miles in five hours, 10 minutes, and 17 seconds with an average speed of 55.75 mph in his No. 21 Method Wheels Mexicana Logistics Ford Raptor. He defeated a field of 85 starters, including 12 in the featured SCORE Trophy Truck class for high-tech, 850hp unlimited production trucks.

"It was less than a perfect race for us," said Vildosola afterward. Primarily because we made a lot of navigational mistakes today. It was one of those wins that just falls into your lap. It is about perseverance and continuing to chip away. We are excited about the win and we came out here to points block for the Bud Light SCORE Baja 1000 because if we won then nobody would go further up on us in points. We hope to go out and do well enough to win the championship, which was the goal last year and is the goal again this year." 





YAMAHA



# SEISMIC SHIFT

## DOES YAMAHA'S YXZ1000R SE CHANGE THE MEANING OF WHAT A SPORT UTV REALLY IS?

WORDS MATT EMERY // IMAGES MATT EMERY AND COURTESY OF YAMAHA

If parting is sweet sorrow, then waiting is sheer agony. For years now, we've been waiting for someone to take on the Polaris RZR XP1000.

Thankfully, our long (inter)national nightmare is over as Yamaha delivered big with their new YXZ1000R and its five-speed manual gearbox.

We'd heard rumors of a few Japanese manufacturers who were working on something that would not only match the RZR in terms of suspension and handling, but would go them one better. We all knew what we wanted and not only what we were hoping for but what we were frankly expecting. We wanted a sport UTV that had it all. And by all, we

mean that it would have a manual transmission.

The Yamaha YXZ1000R gave us what we all wanted. Anyone who's ever rode a motorcycle knows that the shifting pattern is one-down/four-up, and the YXZ uses this same pattern. That means that the shifting is "sequential" in that it's throw is a forward and back pattern, not an H-pattern. But unlike motorcycles, there is a reverse and the transmission on the YXZ is not part of the engine.

That's right; the transmission and transfer case is one unit and it's mounted slightly forward of the engine, between the seats, and is connected to the engine with a shaft. That means that its weight

is centralized and low, which can only help with handling. Driveshafts then run from it to the front and rear differentials. The YXZ features an On-Command, three-way locking setup that is selectable in either 2WD or 4WD.

A hydraulic clutch is used and the pedal throw is very short, maybe 4 to 5 inches, meaning that there will be quick shifts made once the driver gets the hang of it. Though the clutch uses the usual for a motorcycle multiple wet plates, word is that a Rekluse clutch is available for YXZ. That means it would be virtually impossible to stall the YXZ, no matter how low an unseasoned driver lets the rpm go.



You may be wondering how a shaft is capable of connecting the engine to the transmission if the trans is in front of the engine? Easy, the engine is mounted sideways and the shaft is essentially connected to the crank. Measuring out to 998cc, the three-cylinder engine is equipped with a fuel-injection system that features a trio of 41mm Mikuni throttle bodies. The air filter system actually uses two filters: the one that the dust hits first is a cleanable oiled foam unit while the second is oiled paper. The foam unit is easily accessed without the need of tools.

The engine utilizes an 11.3:1 compression ratio, four valves per cylinder for increased flow and redlines at 10,500 rpm. Put those specs together, and you get an engine that is apparently happy running at a high rpm as the YXZ engine seems like a two-stroke in that it likes to be “on the pipe” and makes its power up high. That pipe is a 3-into-1 header that exits via a center-mounted muffler.

That means the driver will be kept busy with that shifter to keep the engine in its powerband, though there is an external flywheel to help with keeping the engine turning over at lower rpm.

The suspension is a double wishbone design front and rear and features 2.5 Fox Podium RC2 shocks. The front suspension is rated at 16.2 inches of travel while the rear measures out to a full 17 inches. The front wishbones are slightly different than an A-arm system in that they are identical and the shock mounts to the lower unit. The rear is slightly different than a trailing arm system in that while the lower wishbones leading arm is longer and attaches to a pivot point near the center of the frame, the upper rear wishbone is a standard wishbone design. Yamaha has used this design because with it, the tires remain vertical throughout its entire arc. Up and down, not up and in.

On all four wheels, one will find disc brakes as twin-piston calipers that clamp to 245mm rotors adorn the Yamaha, and high-quality Maxxis Bighorn tires (MU09 27x11.00R-14 front, Mu10 27x11.00R-14 rear) are the tires of choice. Know that the special YXZ 1000R SE (the cool throwback yellow one) comes with bead-lock wheels while the standard model (blue and orange) do not.

The interior of the two-seater has everything you’d need for a good time out in the dirt. The seats are adjustable, with good lateral support and bolsters



**ABOVE:**  
With Yamaha celebrating their 60th anniversary, the SE model comes in yellow, and has upgrades that the standard blue and orange models don’t.



**ABOVE:**  
Here was the big reveal of the Yamaha YXZ1000R. Yamaha really did the whole thing up right, and result is one that every journalist and shop owner won’t soon forget.

#### BELOW:

With a redline of 10,500 rpm, the three-cylinder engine has four valves per head, electronic fuel injection, and Yamaha’s long history of producing powerful, long-lasting engines.



**ABOVE:**  
Hiding behind the fuel tank is what the excitement is all about: the five-speed manual transmission/transfer case. Notice that it’s not attached directly to the engine, but via a shaft. Notice also that there is a flywheel mounted directly to the engine.



#### LEFT:

This cutaway shows just what the YXZ1000R is all about.



## SEISMIC SHIFT

### RIGHT:

The rear suspension is a combination of a wishbone upper and a modified trailing arm that produces a claimed 17 inches of wheel travel. Yamaha calls it a wishbone rear suspension system, but it's unlike the identical dual wishbones that appear on the front suspension. The 2.5 Fox Podium RC2 shocks are fully adjustable and come standard.



### LEFT:

The SE model comes with these cool 14-inch beadlock wheels that have been shod with high-quality Maxxis Bighorn tires. Lurking behind the wheel is a disc brake setup that consists of a twin-piston caliper and 245mm rotor.

### RIGHT:

The interior is what you'd expect, and the dash has a nice, big analog tachometer to keep the driver aware of the revs. Speaking of which, there is also a programmable shift light, which is a very nice touch.



for your shoulders while the tilt on the steering wheel has 5.8 inches of up and down swing. Speaking of the steering wheel, the YXZ has speed sensitive electric power steering that is connected to a rack and pinion style steering system.

Yamaha has taken a cue from their sport bikes when designing the dash and it has a large analog tach, a speedo, and readouts for the basics: fuel level, gear position, coolant temp, and even a clock. One thing it also has is a programmable shift light, something that will come in handy for drivers who aren't used to the seat of the pants feel of keeping a high-revving engine under control.

Having a good field of vision was important to Yamaha, and the front hood slopes down so far that it was necessary to poke the front shocks up through it. Seeing is believing and when cresting a hill it's nice to see what's in front of you, especially if that uphill quickly becomes a steep downhill.

Fit and finish is typical Yamaha. That means the thing looks like it was assembled with care. From the earliest days of making seriously competitive dirt bikes, a Yamaha product has been put together well. While the European bikes may have been what put motocross on the map, they were a little rough around the edges. That's not the Japanese way of thinking at all. They want their manufacturing process to be exact, and the YXZ epitomizes that philosophy. The parts are cut precisely, welded precisely, and then expertly finished with a deep coating of paint.

Yamaha has a long history of producing performance-oriented machines, and the YXZ 1000R is everything that we were expecting. Only time will tell, but we it's going to change the sport UTV scene as we know it. We're sure that they'll be turning up in at races soon, at least in the stock class, and maybe even with factory assist for major teams. With Yamaha's history of producing high-quality race vehicles, we have little worry that they'll be capable of finishing races and expect to see them winning races soon.

We're hoping to get our hands on one quickly, and will bring you a complete test in the very near future. It may be wishful thinking, but we're hoping to get a new RZR XP1000 Turbo Silver, an Arctic Cat "Robbie Gordon" edition Wildcat, and the Yamaha YXZ and put them head-to-head, so stay tuned. **DS**







**ABOVE:**

Yamaha has already produced a slew of aftermarket pieces ready for the YXZ, such as the LED lightbar and windshield.



**BELOW:**

They also have a spare tire carrier, which is a very good idea to have on the trails.



**ABOVE:**

The high back seats have bolsters and a shoulder restraint to keep the occupants inside and safe. There are three-point belts (like in your car) but it appears that a set of four-point harnesses can be easily adapted thanks to the 'cage crossmember that runs right behind the seats.



**ABOVE:**

For those who do a lot of wood or rock driving, a Warn winch is available, and is mounted inside a Yamaha front bumper assembly.





**BEST IN  
THE DESERT  
ANNOUNCES NEW  
RACE COURSES  
WHILE VOSS  
CONTINUES  
VEGAS TO RENO  
WINNING STREAK**



**VOSS DOMINATES  
VEGAS TO RENO  
FOR A 3-PEAT**





**WORDS** SHAUN OCHSNER // **IMAGES** ERIC MINKS AND MARK KARIYA

**B**est in the Desert racing association gave racers several reasons to get excited for the series. There was much anticipation before the race about the release of the 2016 schedule. But first, there was qualifying on a dusty dry lakebed in Jean, Nevada. With a record 339 entries, Best in the Desert continues to prove why they are the premiere race series in the United States, and why Vegas to Reno is an important race on the schedule.

#### **QUALIFYING SHAKE-UP**

Best in the Desert has used a few different locations north and south of Las Vegas for qualifying. The

last several qualifiers have been held near the parking lot next to the Gold Strike hotel. It always seems Dale Dondel dominates qualifying followed by Sam Berri, no matter where the qualifier is held. This has been a correct prediction throughout the year. This year qualifying was moved to the dry lakebed in Jean. The qualifier included a sandy and whoops section with a few wash-outs. A whole new set of racers would come out with the top spots in qualifying. Las Vegas hometown hero Bryce Menzies would have the fastest lap time. Clean air and staying out front is one of the keys to winning any race. Menzies has some of the best equipment and top pit crews in the sport. Justin Lofton who is no stranger

ERIC MINKS



# VOSS DOMINATES VEGAS TO RENO FOR A 3-PEAT

SHAUN OCHSNER



**ABOVE:**  
Las Vegas hometown hero Bryce Menzies was the top qualifier for Vegas to Reno.



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**ABOVE:**  
Jason Voss pulled off a 3-peat by winning again at Vegas to Reno.



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**LEFT:**  
With the race traversing nearly the entire length of Nevada, the moneyed teams used helicopters to keep track of their racers.



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**ABOVE:**  
Sam Berri chases down Steve Olliges.



SHAUN OCHSNER

**ABOVE:**  
Best in the Desert's Casey Folks was everywhere doing everything, as always.



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**BELOW:**  
Justin Lofton qualified Second at Vegas to Reno.

to the Jean dry lakebed winning the Mint 400 earlier in the year took Second in qualifying. Sam Berri would have to settle for 12th and favorite Dale Dondel couldn't break into the Top 10 with a 12th place starting position.

## GET EXCITED

A special invite-only press conference was held during contingency to announce Best in The Desert's 2016 schedule. There have been many rumors and talk about what is in store for racers during the 2016 season. Best in the Desert has always been proactive and is the first desert racing series to have their schedule out so early. On the schedule will be the normal Parker 400 held at the beginning of February and Mint 400 in March. The big change comes in May as the series will head to Laughlin for a new venue. Formerly called the Silver State race, the buzz is racers are excited to head back to Laughlin, long abandoned by another large desert racing series. Next year also marks the 20th Anniversary of the Vegas to Reno race and promoter Casey Folks is going all out for this one. Dubbed "Vegas to Reno the Long Way," the race features two days of racing. Starting in Alamo, Nevada, Day 1 finish is in Tonopah. The racers then re-start the next day for a finish in Reno. Of course if you thought Folks was done with new course announcements, the final race of the year will be held on brand-new terrain not raced in years. The Nugget 250, sponsored the Pahrump Nugget hotel will start in Pahrump. Folks has worked tirelessly with the state of Nevada and the BLM to get land opened up for the race that hasn't been used in years. Just another reason for racers to "get excited" for the 2016 season.

## 3-PEAT

Trophy Trucks, or "Trick Trucks" as they are called in the Best in the Desert, racing series are the premiere class of desert racing. They are also the most competitive. These days you need top-of-the-line equipment and a massive amount of experience to get out front and, of course, stay out front. It also helps to have an experienced pit crew. Bryce Menzies was the favorite hometown hero and the popular bet for winning the race. Just outside his backyard, Menzies has experience



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## VOSS DOMINATES VEGAS TO RENO FOR A 3-PEAT

### RIGHT:

This class-winning, Cognito-built Polaris RZR should look familiar as we featured the buildup on it in the Dec. '14 issue. Justin Lambert, Justin Sheakley, Brandon Hong, and Victor Herrera put onto the podium in 13:03:56.



### ABOVE:

First overall and First Open Bike went to the N45 of Francisco Arredondo and Shane Esposito who piloted their 450 Honda to a time of 9:20.29.



ERIC MINKS

### RIGHT:

The Hengevelds always seem to be up front, and this time Clayton and Steve put their 250 Honda X10 into First in class with an overall time of 10:21:19.



### BELOW:

Jason Voss celebrates his win at the finish line.



### LEFT:

Next year will be tougher with the new two-day format.

### BELOW:


Finishing Vegas to Reno is an accomplishment.

racing throughout Nevada. So does Jason Voss. Voss has previous consecutive Vegas to Reno wins. Menzies would find himself down for hours while his crew repaired a broken steering rack on the truck. Before long it was Voss who was out front, smooth and consistent, putting time between him and the second truck on the road, B.J. Baldwin. Baldwin also has extensive experience racing throughout the Nevada desert. At the finish an exhausted Voss came rocketing through to take the checkered flag. After minutes of sitting in anticipation Voss was awarded the Vegas to Reno win making his record three in a row. Not an easy task when so many things can go wrong during the longest off-road race in the U.S. The win now puts Voss back in contention for winning his third Best in the Desert Championship.

### WOMEN'S MOTO

Three girls teamed up to race Vegas to Reno, including 25-year-old motocross racer and fitness model Jacqueline Carrizosa from Las Vegas. Her teammates Morgan Tanke and X-Games medalist Tatum Sik were up for the challenge. In a packed field of bikes these girls stood out. They were the only all girls team racing through the vast, hot dusty Nevada desert. These girls knew how dangerous it could be. In the back of every motorcycle rider's mind at this race is that moment when they know they will be caught by the 900hp fire-breathing Trophy Trucks. While Sik has competitive experience in X-Games, Carrizosa brings a military background and motorcycle experience from the WORCS series. Riding a Honda 450 in the Open Expert class they would finish the race Sixth in class and 36th overall. Not bad for having never raced Vegas to Reno.

### WHAT'S NEXT

Out of the 339 entries, 127 trucks and buggies and 66 motorcycles would come through the finish line in Dayton. Next year the racers will have their work cut out for them as the Longest Off Road race in the U.S. just got longer with the 20th anniversary two-day format. The race called "Vegas to Reno: The Long Way" or as some racers are calling it "Vegas to Reno: The Hard Way" will not be an easy one. But if winning was easy, everybody would be doing it. 



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GEISER BROTHERS FOUR-WHEEL-DRIVE TROPHY TRUCK

# GEISER ALL-WHEEL DRIVE

THE MOST  
TECHNOLOGICALLY ADVANCED  
TROPHY TRUCK IN THE DESERT

WORDS SHAUN OCHSNER // IMAGES BOYD JAYNES





**G**eiser Brothers Design and Development race trucks have always been at the forefront of off-road racing. All one needs to do is walk into Rick and Jeff Geiser's Arizona-based shop and you will see trucks belonging to some of the biggest names in off-road racing either being built, prepped, or refreshed. The brothers started building trucks in the late '90s. There are over 50 Geiser Brothers Trophy Trucks racing in the desert. Geiser Brothers Trophy Trucks have won numerous champion-

ships with many of the top teams in off-road racing. Today the Trophy Truck class is one of the most competitive classes out there. You need the best available equipment to win races. The game is no longer an endurance race, but rather having the talent and fastest equipment to beat your competitor. Exactly why Geiser is taking their trucks to the next level. When Jeff Geiser set out to build a four-wheel-drive Trophy Truck, he went to all the major companies to see how they built their parts.

The Geisers have always listened to the drivers that race the trucks they design. They then take that input into consideration to build a better truck. The four-wheel-drive Trophy

Truck is not new to off-road racing but, today with the gearboxes and suspension components that are available, Jeff Geiser has set out to build the next level of Trophy Truck. New technology allows more turning angle and wheel travel in the CVs. Today's products are also built stronger and can withstand the abuse of a 900hp Trophy Truck

Jeff settled on the Fortin differential and added a Wiseman Transfer Case. He also pulled out all the stops when it came to technology. There are hydraulic jacks that come down on either side lifting the truck up for rapid tire changes. Seconds count when trying to win a desert race. Any time that can be saved changing a tire can translate to a race win.

When you are in a Trophy Truck blasting down the Baja peninsula at 120 mph you need a reliable light to see obstacles on the course.








This is where Rigid's front lightbar comes into play throwing enough forward light to make it seem almost daylight for the driver.

The truck also features a complex engine management system complete

with a backup. The tire pressure sensor lets the driver know exactly when the tire is getting low. The driver also can diagnose a problem with the fuel pump via the dash. With all of the diagnostic information at the driver's fingertips,

critical decisions can be made on the fly out in the desert or the pits. The Trophy Truck will continue to evolve into a super machine. That means the Geisers have to adapt the latest greatest technology to keep their trucks competitive. 

**LEFT:**

The front suspension features 24-inch A-arms with King 3-inch coilovers and a 4-inch bypass. Top-of-the-line Brembo six-piston brakes provide stopping power for the truck.

**BELOW:**

The transmission system is built by Rancho Drivetrain Engineering with a Weismann transfer case.

**ABOVE:**

The interior features all of the latest available technology with a Motec ignition and monitoring system. Two displays allow for driver and navigator to keep an eye on the system. Also two Lowrance GPS systems are featured.

**ABOVE:**

Geiser Brothers expects to change the "game" with the new all-wheel-drive Trophy Truck.



**ABOVE:**

The truck features a Dougans 840 hp racing engine with an eight-stack Kinsler fuel injection. The exhaust is built by Borla and cooled by Ron Davis/Fluidyne

**RIGHT:**

Rigid Industries Lights are featured through out the truck.

**BELOW:**

The four-wheel-drive system utilizes a Fortin Front differential with a Weismann transfer case to keep all of the wheels turning. The hub and CV assembly is built by Tubeworks.



**LEFT:**

A Pyrotec Racing Fuel Cell is used in the rear with two quick fill connections for rapid fueling during the race.



**ABOVE:**

The Motec system can monitor all kinds of sensors on the truck such as tire pressure, engine oil temperature, fuel miles-per-gallon and battery voltage.



**ABOVE:**

Mastercraft Impact seats with a four-point harness keep the driver and navigator comfortable in the interior.



## BUILDSHEET

### GEISER BROTHERS FOUR-WHEEL-DRIVE TROPHY TRUCK

**CHASSIS:**

Geiser Brothers

**REAR SUSPENSION:**

28-Inch 4-Link

**MANUFACTURER:**

Geiser Brothers

**SHOCKS FRONT:**

King 3-Inch Coilover 4-Inch Bypass

**WHEELBASE:**

125 Inches

**SHOCKS REAR:**

King 3-Inch Coilover 4.5-Inch Bypass

**TRACK WIDTH:**

92 Inches

**BRAKES FRONT/REAR:**

6-Piston Brembo

**WEIGHT:**

4,450 Pounds

**WHEELS/TIRES:**
**WHEELS:**

KMC Forged

**ENGINE/DRIVETRAIN:**
**MANUFACTURER:**

Chevrolet

**TIRES:**

BFGoodrich 39-Inch KR2

**BUILDER:**

Dougans Racing Engines

**EXTERIOR:**
**BODYWORK:**

Fiberwerks

**HORSEPOWER:**

840

**PAINT/GRAPHICS:**

CR Designs

**INDUCTION:**

8-Stack Kinsler Fuel Injection

**LIGHTING:**

Rigid Industries

**AIR FILTER:**

K&N

**INTERIOR:**
**SEATS:**

Impact

**EXHAUST:**

Borla

**COOLING:**

Ron Davis/Fluidyne

**STEERING WHEEL:**

Sparco

**PLUMBING:**

XRP

**DASH:**

Geiser Brothers

**WIRING:**

Wirefab

**GAUGES:**

Motec

**SUSPENSION:**
**FRONT SUSPENSION:**

24-Inch A-Arm

**RADIO/INTERCOM:**

Rugged Radios/Kenwood


**ABOVE:**

The truck runs on 39-inch KR2 BFGoodrich Baja T/A tires with KMC Forged Wheels.


**ABOVE:**

The Rear suspension is a 28-inch four-link with 3-inch King coilovers and a 4.5-inch bypasses. Brembo six-piston brakes also provide rear stopping power for the truck.

**ADDITIONAL INFORMATION**

// [WWW.RIGIDINDUSTRIES.COM](http://WWW.RIGIDINDUSTRIES.COM)

// [WWW.GEISERBROS.COM](http://WWW.GEISERBROS.COM)

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# THE BEST RACE TRANSMISSION THERE IS?

## INSIDE THE ALBINS ST6-I

WORDS AND IMAGES // MATT EMERY

**H**enry Ford supposedly said that auto racing began about 10 minutes after the second car was built. Ever since then, folks have been thinking up ways to go faster. But having a fast engine is only half the equation in that, the power has to be properly channeled.

At first, shifting the transmission was done with a manual transmission. After WWII though, the OEM's wanted to keep their well to



**LEFT:**

The many parts for the Albins are laid out in preparation for the build; or in this case a rebuild. Note that the gears are straight cut and roller bearings are used throughout to reduce friction.



**ABOVE:**

Albins redesigned the First gear slider hub to make the slider and hub stronger. It also locates the slider or "dog ring" better.

**BELOW:**

There are many little holes lining the inside of the cases, these are for the internal oil distribution system.



**ABOVE:**

The reverse slider, fork, and hub mechanism are installed first.



**ABOVE:**

Here, the dog ring is in place. Note that there are six contact points and the male parts are in the slider, not the hub. Again, this is for increased strength.

do buyers, the ones who didn't want the hassle of shifting, happy. The early automatic transmissions were limited in how well they performed, but it was better than shifting the manuals of the day.

For the majority of auto racing history though, manually shifting was the only way to get all of the engine's power to go to the rearend. But there are downsides to everything, and it was always known that the sheer time it took to engage clutch, grab another gear and then let out the clutch, not to mention that the forward momentum you lost while being off the gas, was hurting lap times.

So some smart guys took a look at beefing up automatic transmissions, as did others with the evolution of the performance torque converter. Chevy's TH350 and TH400, along with Ford's C4 and C6, were at the forefront of this performance revolution. The manual shift body was also devised, which kept these trannies in the gear that the driver chose. A long time ago I had a B&M



**ABOVE:**

There are two shafts inside; one is this counter shaft that has the First gear cut into it as well as the reverse gear/oil pump drive gear.



**ABOVE:**

Here, all three pieces of the reverse mechanism are in place, as well as the reverse slider, fork, and hub mechanism.







**LEFT:**  
With the installation of the First and Fourth gears, this half of the gear stacks is complete.



**ABOVE:**  
The bearings for the mid plate support are installed. Rather than have old style bushings pressed into it, these bearings fit into the plate to increase stability, reduce friction and "grab."



**ABOVE:**  
Note that there is a rubber O-ring in the mid plate support that's lubed before the assembly is slid in place.

**RIGHT:**  
Time to build the other side. Both halves of Second gear are slid into the main shaft.



**ABOVE:**  
The Albins is assembled so that the 1-4, 2-5, 3-6 gears are paired. That is done so that shifting speed of the trans is increased as the trans will actually be shifting to the next gear at the same time as it's shifting out of the gear that it's in. So theoretically, shifting speed is twice as fast.



**ABOVE:**  
With the installation of the Sixth gear done, this completes the gear shaft assembly.

TH400 with a Quick Click shifter in a '68 El Camino, and it was fun. For three-gears anyway.


Again, some smart guys took a look at what was there and decided to improve upon it. The result is the Albins ST6 series of transmissions. The Albins is a purpose built, sequential shifting race transmission that is light, compact, and while we think that the ST should stand for Super Trick, the 6 means that there's six speeds.

Made for transaxle and stand-alone transmission applications, all ST housings are made from cast LM25 aluminum and then heat treated to T6 condition. The ST6-I is the unit that's for front engine applications, the ST6-TT for Trophy Trucks and the ST6-IR32 for front engine 4WDs. They can be paired with either a torque converter or a clutch assembly.

Sure, there's six gears, but the one thing that Albins gets really right is how it's shifted. The Albins is assembled so that the 1-4, 2-5, 3-6 gears are paired inside. This not only makes the unit more compact, it also increases the shifting speed of the trans because the trans will actually be shifting to the next gear at the same time as it's shifting out of the gear that it's in. So theoretically, shifting speed is twice as fast.

There's even a super trick shifter that will "read" the pressure put on it while shifting that will either automatically blip the throttle or disrupt the ignition to make the shifting that much smoother and quicker. That shifter is sequential in that it only throws forward and back, making shifts fast and secure.

We went to Weddle Industries, who are the United States representative for the Australian made ST6, to get the inside story on this revolutionary transmission. Weddle, who has a 40-plus year history of their own with their line of very trick transaxles, is primarily a transmission parts manufacturer, but they also rebuild the Albins and were doing so on the day we arrived.

So if you want a transmission that will stand the rigors of off-road racing, is as trick as they come, can be tuned to both your engines power output and track conditions, can be made to work with either a torque converter or a clutch, give Weddle Industries a call and they can hook you up. 



# THE BEST RACE TRANSMISSION THERE IS?



**ABOVE:**  
The shift rail is slid through the shift forks.



**ABOVE:**  
There's a lot going on in such a small space. Note that this side of the assembly actually is the side that mates to the engine.

**BELOW:**  
This shot shows how the shuttle mechanism will be sitting in relation to the shift drum and how it will be doing the actual shifting of the trans.



**BELOW:**  
The shuttle mechanism is installed into the front housing.



**ABOVE:**  
The front housing is slid onto the rear housing and mid plate support.



**ABOVE:**  
There is liberal use of Loctite used on most fasteners.



**ABOVE:**  
Most fasteners are also torqued. These case bolts are tightened to 18 ft-lb.



**ABOVE:**  
This shuttle cover has a spring inside the bulge, so shuttle mechanism is almost pre-tensioned in that there is spring tension on it from both directions.



**ABOVE:**  
There is also liberal use of sealant, as this shift shaft cover is prepped prior to its being installed.





### ABOVE:

See those four big holes? Those are special inspection holes so that the shift throws and action can be seen when the assembly is spun (by hand).



### ABOVE:

Remember those tiny holes in the cases? Here is the internal oil pump that energizes them. This pump can (and should) also be hooked up to an external cooler.

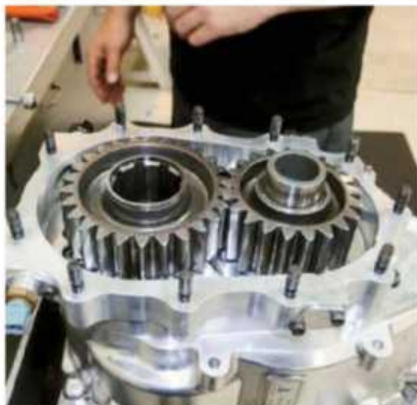


### ABOVE:

The drop gear housing being installed.

### BELOW:

It's the drop gears where the Albins again shines. The drop gears reduce the final drive ratio sure, but they are available in different ratios to fine-tune that final output. It's generally believed that a taller rear end ratio is stronger and least abusive for the rearend, so, depending upon the track design or conditions, these drop gears can be changed to perfectly match the truck to the track. Trick.



### ABOVE:

The drop gear cover and output flange is installed.



### ABOVE:

A potentiometer reads the shift drum rotation and sends a signal to tell what gear the trans is in.



### ABOVE:

The input shaft assembly is actually part of the bell housing.

### BELOW:

The handle of this shifter measures how much force is being exerted onto the shift knob and sends a signal to ECU, which will trigger an ignition cut or to blip the throttle, which helps with smoother, faster shifting.



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# HERDING BRONCOS, OREGON STYLE

## VINTAGE BRONCOS GATHER FOR ANNUAL NORTHWEST BRONCO ROUNDUP AT THE OREGON COAST

WORDS BRUCE SMITH // IMAGES BRUCE SMITH AND ANDY VAUGHN

It's a sight to see: a line of more than 125 vintage Broncos stretching out more than a half mile, snaking their way, lights ablaze, toward the wide-open beach that fronts the Oregon Dunes National Recreation Area just south of the little seaside town of Florence, Oregon.

Like lemmings advancing to the sea, the owners of these '66-'77 bobtails, ranging from bone-stock models to full-on custom rigs, push forward with a purpose through the sand road that's nothing but whoops and ruts until it spills out onto the smooth sands fronting the surf of the Pacific Ocean.

The Bronco drivers' destination is a

night ride along the beach. The romp on the smooth sand next to the roaring surf is a Thursday evening tradition for the Northwest Bronco Roundup. "Our evening beach run is one of the most popular of the many runs, events, and show 'n' shine we have during NWBR (Northwest Bronco Roundup)," says Andy Vaughn, one of the event coordinators who rolls along midway in the herd of beach-bound Fords with his '68.

Early Saturday morning, Bronco owners are greeted by a clear blue sky that pulls nearly everyone of the 172 bobtails back to the massive ODNRA dune complex that stretches for 50 miles from Florence on the north to Coos Bay on the southern end.

Some drive the couple miles from downtown Florence to the Goose Pasture OHV Staging Area, while the majority head about the same distance north from Jessie M. Honeyman State Park where many of this year's attendees are camping out.

A few of the heartier souls, such as Mike Johnson, a 34-year Bronco owner from Albany, Oregon, took advantage of remote campsites in the fore dunes, greatly shortening their drive time to the biggest sandbox of its kind in the world.

The Johnsons and several other families pulled their travel trailers and pickup campers to Camp 6 and off-loaded their eclectic mix of Broncos early in the week





**ABOVE:** A walk along the show 'n' shine at Honeyman State Park during NWBR reveals a wide variety of vintage iron from stock to works-in-progress to wild customs, and a bit of everything in between.



**ABOVE:** Andy Hess having a little fun on the sand. It was the first time he'd had his '73 Bronco out on the sand since it's restoration: "We've made many friends in our Bronco journey and we wouldn't change a minute for any of the blood, sweat, and tears we put into it."



**ABOVE:** Although NWBR is primarily a vintage '66-'77 gathering, there are some later-model Bronco owners, such as Alan Schneider in his diesel-powered '93, who just have to show up to play with the bobbails.



**LEFT:** This wicked Bronco of Robert Warke's runs on camp fuel. The engine driving his propane-powered ride looks like a plumber's nightmare.



**ABOVE:** Mike Johnson's '74 Bronco just came out off a frame-off restoration/rebuild that included a 5½-inch BC Broncos/Wild Horses suspension to clear the 37-inch Toyo tires. Power comes from a crate 408 stroker making 425 hp and 455 lb-ft of torque so climbing dunes isn't a problem.



**ABOVE:** This purpose-built trail rig of Jim Shrum found the transition from the rocks of Moab to the dunes of Florence, Oregon, an easy one. His '70 bobbail runs a custom, long-travel four-link that he designed and fabbed.



**ABOVE:** Sand camping is one option when attending NWBR. This is Camp 6, which is popular because it's close to the Goose Pasture Staging Area.

**RIGHT:** Tom's Bronco Parts hosted the evening beach cruise that took participants from Goose Pasture Staging Area over the dunes and dune access road to the South Jetty Beach. All makes and models of vintage iron showed up, lights blazing.



PHOTO BY ANDY VAUGHN



## HERDING BRONCOS, OREGON STYLE

for NWBR. Among the half-dozen vintage Broncos sits Johnson's Ranger-edition '74 half-cab, which just came out of a complete frame-off "rotisserie" rebuild that added a full-roller Windsor 408 stroker making 425 ponies.

A few yards away, Lydia Maine is getting ready to cruise in her awesome Turquoise '67 Roadster that looks like it just rolled out of the showroom. And sitting on a trailer off to the side is her dad's '70 Bronco sand dragster with big paddle tires filling the cutout wheelwells.

That collection of classic four-wheel-drive Ford iron sitting in the sand camp reflected what NWBR is all about: bringing hundreds of Bronco aficionados of all types together to enjoy four summer

days talking shop, telling tales, having fun, and sharing their love of Ford Broncos from an era long past but still kept wildly alive.

"It's all about family and friends, and making new friends," says Jim Shrum, who brought his family up from Roseburg, Oregon, for the event. Shrum is normally seen muscling his way over the rocks of Moab and the Rubicon Trail in his custom-built '70 Bronco. He's discovered this week of vacation that his trusty steed does quite well tackling the steep dunes and soft sand.

But NWBR isn't just about the owners of vintage Ford iron throwing sand and showing off their wheels. It's also about giving back to their host community. The

clubs and individuals who participated in this year's gathering collected and donated 3,832 pounds of food (more than the weight of a '70 Bronco) and presented the bed loads of goods to the Florence Food Share program.

"Not too bad for a group of people who love a specific body style of vehicle that ceased production 35 years ago," says event organizer Tom Dummer. No, not bad at all. Dummer says, "We have yet to announce next year's official Northwest Bronco Roundup dates, but stick around and check back on our website within the next couple months and we will have the dates listed. We expect to easily eclipse 200 for next year's 50th anniversary of the Ford Bronco." **DS**



**ABOVE:** Broncos "kicking up their heels" during Thursday's evening beach run is a tradition of the Northwest Bronco Roundup. More than 125 NWBR participants rolled onto the ODNRA sand at the South Jetty beach access road.



**ABOVE:** A lot of NWBR participants make the event a family vacation and bring along their other toys to play in the Oregon Dunes National Recreation Area. Sport quads and Polaris RZR side-by-sides are very popular toys while this golf cart has been turned into a Bronco replica.



**ABOVE:** The Northwest Bronco Roundup participants donated 3,832 pounds of food to the local food bank in Florence.

**RIGHT:** Lydia Maine rolls by a neighbor's sand camp on way to pick up friends for a day shopping in Florence. It's the teenager's first Bronco and she already has big plans for it.



**LEFT:** Narrowing the rear bodywork is one way to get more tire clearance on your bad-boy Bronco. At least that's what Heath Walker believes.

**ABOVE:** Fun, food, and camaraderie. That's the theme of the annual Northwest Bronco Roundup, which brought together more than 170 Bronco owners and their families to Florence, Oregon. Most of the group festivities, raffle, and social gatherings were held at Honeyman Memorial State Park just south of Florence, Oregon.



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# THE OFF-ROAD TRIP OF A LIFETIME

## CONQUERING THE CONTINENTAL DIVIDE

WORDS AND IMAGES // KURTIS A. CLARK

**T**he North American Continental Divide, following the Rocky Mountains from Canada to Mexico, is a prominent geographical feature and offers some fantastic scenery. It also offers a variety of recreational activities. I should know; I rode a dual sport motorcycle from the top of this country to the Mexican border. And I did it with nary a stretch of pavement to spoil the off-road trip of a lifetime.

In 1978, Congress designated the Continental Divide Hiking Trail (CDT). It takes about six months to hike its length, if you're into that type of thing. Nine years later the mostly dirt Great Divide Mountain Biking Route (GDMBR) was mapped. It takes about three months

to ride. Better, but still not what I had in mind. Later on, some creative individuals realized that, with appropriate routing changes (since some of the trail is not open to motorized vehicles), the mountain bike route could be followed on motorcycles, Jeeps, and in certain places, UTVs. Bingo!

My wife and I enjoy traveling, and what better vacation (for me, anyway) was to plan a dual sport trip that follows the Continental Divide all the way from the Canadian border to the Mexican border. We drove together to Glacier National Park, where I kissed her goodbye, hopped on my Honda, and set off. Being the wonderful soul that she is, she agreed to be my "chase crew" for the trip. That is, she traveled by truck on

paved roads while I rode my bike along the GDMBR's dirt roads.

We met back up every night at a pre-arranged hotel. We stayed in motels but there are plenty of camping opportunities as well. Just be aware that much of the route is in Grizzly territory and food must be stored properly. Bear repellent spray is recommended.

From border to border our trip took three weeks, but the actual "trail time" was only took 14 days. The rest of the time we spent at some of the locations we passed to see the sights of which there are many. From nature at it's most beautiful, to tourist destinations, to just plain old ghost towns, there is a lot to see and do on the trail. Yes, it was as great as it sounds.



#### ABOVE :

For off-roaders, this is the yellow brick road. Using this, you can wheel from one border to the other, and virtually all on dirt roads.

#### BELOW :

The starting point for this journey was at the 49th parallel north: the US/Canada border near Glacier NP. The Flathead Border Station is currently inactive, but it's a great place to start out on the journey of a lifetime.



#### ABOVE :

Heading to Helena on a beautiful two-track road in the Flathead National Forest, Montana. The vast majority of the trail is made up of roads like this.



#### ABOVE :

Old homesteader cabins are common along the route. This one is south of Butte, Montana.



#### ABOVE :

These beautiful switchbacks climb the Pioneer Mountains south of Melrose, Montana. As with many places on this ride, the view is stunning.



#### ABOVE :

Hotel Meade is in the ghost town of Bannack, Montana. It was built in 1875 and first served as the county courthouse.

#### RIGHT :

Sapphire Pool is one of many thermal springs in Yellowstone National Park.



#### BELOW :

South of Island Park, Idaho, the former Union Pacific RR bed was turned into a recreational trail.



After completing the 2,860-mile route by motorcycle, I can now confirm that it is suitable for SUV, prunner, and 4x4 vehicles. About 2,000 miles are dirt: forest roads, BLM roads, county roads, etc. The remainder is paved: county or state roads and roads through towns. While the route is not technically challenging, it certainly is an adventure. It is large in scope and visually stunning with constantly changing scenery. The trail leads you through areas that you would not normally see. It takes you off the interstate highways and places you in the quieter backcountry. The route offers a glimpse of the past when people crossed the country on simple roads like these out of necessity.

At the same time, the trip is a low-risk

adventure. The majority of the dirt roads are fairly easy. There are a few bumpy or rocky sections, but standard SUVs or high-clearance vehicles would not have a problem. The main issue for mountain bikes and motorcycles is mud, but with a 4x4, it's possible to continue through. The route crisscrosses paved roads often enough that fuel, supplies, and lodging can be found within reasonable distances. The longest distance between fuel stops (through Pie Town, New Mexico) was 260 miles but, if needed, fuel was available about 20 miles off-route.

To plan this trip I used AAA maps for the states, GoogleMaps, Garmin BaseCamp with Topo U.S., and information from the Adventure Cycling Association ([www.adventurecycling.org](http://www.adventurecycling.org)).

Adventure Cycling offers a complete set of paper maps for the GDMBR as well as a GPX file (tracks for your GPS) of the complete route. Since the GDMBR route goes through nonmotorized areas at times, it must be altered to suit the needs of those with motorized vehicles. I did not try to follow it exactly; I veered off it at times to incorporate places the wife and I wanted to see. It's OK to be creative and to make it more of a trail that you'd enjoy. It took a little work, but in the end I had a set of tracks loaded in my GPS to follow.

I travelled about 200 miles per day, which actually worked well as the roads and trails were not too challenging. The shortest day was 150 miles while the longest was a full 270 miles. But if I did



## THE OFF-ROAD TRIP OF A LIFETIME

it again, I would reduce that to allow more time to stop and see things. The route passes four National Parks: Glacier, Yellowstone, Grand Teton, and Rocky Mountain. All are worth an extra day each to see.

**Montana:** The route starts at the Canadian border near Glacier National Park and takes you all the way to Yellowstone. It winds through mountains and forests, as well as across wide, flat valleys. The scenery constantly changes. Between Helena and Butte the trail gets a little more challenging at a place called Lava Mountain. Some rocks, mud, and climbs make it a fun section. Both Helena and Butte are interesting stops due to their rich mining history and historical sections. Near Dillon the trail quickly gains elevation and becomes more remote; the area is very scenic. Other sections of the trail follow rivers, valleys, and foothills.

**Idaho:** There is just a short section through Idaho, but it goes through the beautiful Island Park and Harriman State


Park area, which caters to off-roaders as well as fishermen (so brings your poles and lures). In addition, there are the scenic Upper and Lower Mesa Falls to visit.

**Wyoming:** Besides Yellowstone and Grand Teton National Parks, the trail passes through the Wind River Mountain Range and across the Great Divide Basin. The views in the basin become completely different with great plains and rolling hills. This historic area was used by the pioneers as they travelled the Oregon and California trails to settle the West.

**Colorado:** The terrain becomes steeper and higher, with many passes over 10,000 feet in elevation. I took liberties with the trail routing here in order to see the Silverton/Durango area, crossing over Tincup, Cumberland, Engineer, and Cinnamon Passes and getting close to 13,000-foot elevation at one point. There are a lot of old towns and mining ruins to explore. Wonderful!

**New Mexico:** In spite of having 13,000-foot tall mountains (even near

the southern border they are still over 8,000), the scenery transitions from jagged mountains to more flat terrain. The flora changes as well and become more desert like. From Chama, we rode the wonderful Cumbres & Toltec Scenic Railroad. Like the one in Durango, it is a remnant from the Denver & Rio Grande's narrow gauge steam engine past. South of Grants is a unique black lava flow bordered by white sandstone cliffs. The trail south of here to Pie Town and beyond seems prone to mud from afternoon thunderstorms. The area feels remote, but in a good way. Sometimes I went more than 50 miles without seeing anyone. Silver City, home to one of the world's largest copper mines, is a nice stop and has a rich mining history.

Overall, this was a wonderful trip and experience. A trip like this takes a lot of effort to plan and schedule, but once you start driving the trail you realize it was all worthwhile. That is what experiencing the outdoors is all about. 



**ABOVE :**

While some parts are serious 4x4 stuff, this section of Flagg Ranch Road entering Wyoming is wide and flat enough for a motor home.



**LEFT :**

On the trail from St. Elmo to Tincup in Colorado. This trail is rocky and slow, but not difficult. It goes over Tincup Pass at 12,154-foot elevation.



**ABOVE :**

This road near Separ, New Mexico, heads south toward the Mexican border. It looks like desert even though the elevation is 5,400 feet. It is green because New Mexico received a lot of rain this season.



**ABOVE :**

Camping by Jenny Lake in the Grand Teton National Park, Wyoming, seemed too good to be true. Wheeling all day and then staying here for the night was glorious.



**ABOVE :**

Climbing Cinnamon Pass from Lake City, Colorado on the Alpine Loop. The pass tops out at 12,640-foot elevation.

**RIGHT :**

Many trails in Colorado are open to ATVs as well as licensed vehicles and were just some of the many types of off-road vehicles that I saw on the trail.



**ABOVE :**

After some 2,860 miles of off-road fun, the wife and I finally arrived at the end of the trail: the U.S./Mexico border.



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# A SULTAN OF STYLE AND SUBSTANCE THAT'S AT HOME ON THE BOULEVARD OR BAJA

WORDS AND IMAGES //

MATT EMERY

**W**hile we here at *Dirt Sports + Off-Road* are of humble means, and being financial realist's could never own something like this awesome '15 Chevy Silverado. That thinking is the exact opposite of the guy who built this truck the first time. Though it's now owned by Jason McNeil of Fiberwerx and has seen a few upgrades, it was begun and built by Jason Duncan. You might have seen him and his truck living the dream in the Method catalog, or drifting and jumping through the streets of downtown San Diego or the

Gordon's & Glamis Sand Dune Range.

Duncan wanted a "Luxury" prerunner and wasn't about to take reality for an answer. To do so, he drove around in a junker Saturn, gave up racing, and sold his race Ranger to Eddie Thorogood for a decent price; but with the stipulation that Eddie had



# ELEGANT



to help him build the truck of his dreams. Every dollar he made as a cable installer went to his dream, and thus began the truck seen here.

They started with the frame, which is a full-tube chassis that Ed Fab Designs designed and used a complement of Weitzel Motorsports suspension components. The front suspension consists of Weitzel compo-

nents (arms, spindles, etc.) along with Hypercoils equipped Fox Racing Shocks 2.5 Coilover with 3.0 coil adapters. A pair of Fox Racing Shocks 4.4 six-tube Bypass shocks and 2.0 Factory Series bump stops completes the front suspension. A Howe Performance 3.0 TT Rack allows the driver to precisely point the big Chevy exactly where he wants it.

The rear is Trophy Truck as long trailing arms combined with equally long Fox Racing shocks keeps the back end reacting precisely to

any bump in the ... um, trail. The rear-end in question is a Chrisman 10-inch rearend assembled by San Diego Gear & Axle while the driveshaft work was done by Driveline Specialties of San Diego.

Both up front and in the back one will find CNC six-piston calipers with 14-inch rotors as well as huge 39-inch Toyo M/T Open Country Tires (39x13.5R17) mounted onto Method Double Standard beadlock (17x9) wheels. The combination of Fox, CNC, Method, and Toyo makes this Chevy a serious contender on any trail.

Another reason for that assessment is thanks to the Danzio Performance Chevrolet 6.2L LS3 engine. Displacing 376 ci and dyno'd at 525 hp, there's plenty of power on tap. Some upgrades include Butler Custom Headers based exhaust system that ends in a single 4-inch MagnaFlow muffler. Moving those horses along is the Juan Co Turbo 400 transmission that's cooled with a CBR Performance 16x14 trans cooler.

One of the changes that new owner McNeil made was to replace the cab with a 2015 crew cab model (he's currently doing the same type of build with a new F-150 cab). While the cab may metal, everything else is Fiberwerx as trick carbon fiber fenders and besides provide lightweight and that killer Trophy Truck style. Once completed, it was off to Bink Designs for the graphics.

Baja Designs lighting provides plenty of lumens thanks to the 30-inch Radius ONX LED Bar with 4 XL80 Universal LED's mounted into the grille, while a 50-inch ONX LED Bar has been placed atop the aforementioned cab.



# EFFICIENCY



## ELEGANT EFFICIENCY


Do you like your upholstery shop to be friendly? Apparently so does McNeil as he had Friendly Upholstery cover the Design Works custom metal dash and center console with black leather and install the headliner around the in-cab cage. A host of Lavorsi Gauges have been installed into the dash, which got crowded thanks to the Lowrance HDS10 GPS unit, a Vintage Air air-conditioning panel, the PCI Race Radios Intercom and dual Kenwood radios. Into the cool console went switches for everything electrical along with the Winter's shifter. There's even three cupholders!

There are twin Mastershift Electronic shifting paddles attached to the MOMO

steering wheel while a trio of Mastercraft seats complete with Mastercraft five-point harnesses keeps the occupants bucked in tight. Also "tight" is the stereo system as a JL Audio HD 600/4 amplifier powers two sets of ZR650 components and an HD750/1 amplifier powering the single 10-inch W7 subwoofer. After all, it has to be louder than the truck itself.

The recent upgrade took five months to complete and was just done in time for the Off-Road Expo. This build was a real San Diego collaboration, as all of the shops that helped with the build are located there. They are Complete Fab, Precision Race Designs, Quixotic Motorsports, Mirage Race Products, and Alloy Studios.

This truck was intended to be what McNeil uses while prerunning and as such has all the comforts, but that doesn't mean it isn't capable. McNeil was set to race his TT in the Record 250 back in June 2014, but there was an insurmountable problem with the transmission. So instead of going home, he made the decision to race the prerunner instead! Not surprisingly, he ended up winning First overall and says that he and race crew (which included Duncan) had the time of their lives doing so: going fast with the stereo blasting and the A/C cranked. We're thinking that those cupholders may have come in handy, too.

Now that's what we call elegant efficiency. 

**RIGHT:**  
Its plain white exterior may be unassuming, but this Chevy has everything a driver needs to win and be comfortable doing it.



**ABOVE:**  
Trophy Truck worthy suspension components adorn the Chevy, as Weitzel Motorsports arms and spindles along with Hypercoils equipped Fox Racing Shocks (2.5 coilover with 3.0 coil adapters and 4.4 six-tube bypass) and 2.0 Factory Series bump stops provide TT wheel travel.



**ABOVE:**  
Words fail to describe just how sweet this interior really is.



**ABOVE:**  
Getting the stop on is done with six-piston CNC calipers with 14-inch rotors.

**LEFT:**  
Tough Method Double Standard beadlock (17x9) wheels have been mated with huge 39-inch Toyo M/T Open Country Tires (39x13.5 R17).



**ABOVE:**  
The rearend is a Chrisman 10-inch rearend assembled by San Diego Gear & Axle and features a 5:29 gear ratio.



**RIGHT:**  
The Design Works custom metal dash and center console has been covered with black leather by Friendly Upholstery and features Lavorsi gauges, a Lowrance HDS10 GPS unit, a Vintage Air air-conditioning panel, the PCI Race Radios Intercom and dual Kenwood radios. Into the cool console went switches for everything electrical along with the Winter's shifter. There's even three cupholders!





## ELEGANT EFFICIENCY



**LEFT:**  
A trio of Mastercraft seats are completed with five-point Mastercraft harnesses.



**ABOVE:**  
The Danzio Performance tuned Chevrolet 6.2L LS3 engine has been dyno'd at 525 hp, and includes Butler custom headers that ends in a single 4-inch MagnaFlow muffler.



**ABOVE:**  
The back is packed with spare tires, a radiator, a jack, some tools, and is topped with a Baja Designs 50-inch ONX LED lightbar.



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# THE SHOCKING LATEST NEWS

## FOR YOUR 2 OR 4WD RIG

WORDS JOHN CAPPA

IMAGES COURTESY OF MANUFACTURERS

## FOR WHEN THE RUBBER MEETS THE ROCK

It doesn't matter if you are searching for high-end bolt-on shocks that fit your stock 2 or 4x4 truck, or if you are building a one-off creation with custom shock mounts, the top-tier aftermarket shock industry have been coming up with a steady stream of new shocks. Ranging from the basic mono-tube to multi-bypass, these new shocks represent the latest in metallurgy and suspension evolution.

We've compiled the companies that are offering new high-performance off-road shocks that fit or can be fit to your rig. Most of these companies offer many different shock models, so if you don't see what you like here, don't be shy—head on over to the company's website.

### ARB

ARB recently jumped into the high-end shock market with the Old Man Emu BP-51 externally adjustable internal bypass shock. The shocks are designed to utilize existing mounting locations on Jeep and Toyota 4x4s to allow bolt-on installation without the need for additional vehicle modifications. The shocks feature a 51mm diameter bore. In addition to the velocity-sensitive damping, BP-51 shock absorbers also generate damping dependent on the position of the piston within the shock absorber's body via the bypass design. The bypasses are independently adjustable for both rebound and compression damping. This shock valving combination is said to provide the best of both worlds, with a comfortable and compliant ride during normal driving, and a more controlled ride over rough terrain. With increased damping at each end of the stroke, the shock piston slows as it approaches full compression and extension, preventing harsh topping and bottoming out of the suspension. Each shock absorber body is manufactured using aircraft-grade 6061 anodized aluminum to dissipate heat and provide corrosion resistance.

### ARB

866.293.9078  
arbusa.com



## BILSTEIN

The new Bilstein 8125 Series is said to be designed specifically for the serious off-road enthusiast. The new monotube coilover shocks are available in 46 mm (2.0-inch) and 60 mm (2.65-inch) diameters in 8-, 10-, 12-, 14-, and 16-inch travel lengths. The company also offers short-body versions of the 60mm coilovers for those who are fitting shocks into confined spaces. Each shock features a zinc-plated threaded body with dual-rate coilover hardware. The remote reservoir with a large -8 AN hose provides greater resistance to heat, and the high temperature seals are said to extend the life of the shock. The shocks cycle via a 22mm case-hardened piston rod and have industry-standard 5/8-inch bearings at each end for mounting. The 8125 Series shocks are designed to be owner rebuildable. All components are billet machined and made right here in the USA. There are no cast parts used. Bilstein offers a full line of high-end shocks for custom and race applications as well.

**BILSTEIN**  
800.537.1085  
bilstein.com



## FOA

The FOA OEM remote reservoir shock upgrade kits provide an easy, hassle-free, bolt-on installation for the front of your Ford F-150. No cutting or welding required. The 2.5-inch-diameter coilover shocks are made from zinc-plated 1026 steel and feature black anodized aluminum components. These front FOA F150 shocks offer an adjustable ride height and up to a 25 percent increase in wheel travel. They fit '04-'13 4WD and 2WD trucks.

**FOA**  
855.362.7469  
f-o-a.com



## FOX SHOCKS

You'll find Fox shocks on factory applications ranging from mountain bikes, UTVs and snow machines, to the '17 Ford Raptor. However, the company offers a full line of aftermarket universal air, smooth-body, coilover, and adjustable bypass shocks, as well as bolt-in performance shocks for many popular 4x4 applications. The latest includes the adjustable Dual Speed Compression (DSC) shocks for the '07-current Jeep Wrangler JK. The DSC adjusters provide tuning for on-road use while also offering more aggressive damping for use off-road. The simple adjusters increase both low and high-speed compression levels up to 25 percent, giving you the ability to maximize small bump compliance and traction while still having the extra damping required for big hits.

**FOX**  
619.768.1800  
ridefox.com



## FABTECH

Fabtech offers a full line of 2, 2¼, 2½, and 4.0-inch high-performance Dirt Logic shocks. The company has expanded the line of high-end Dirt Logic shocks to include adjustable piggyback and adjustable remote reservoir shocks. This new design gives the user the ability to change the compression damping of the shock while on the vehicle. A 10-way knob with detents allows for wide range of adjustments to suit many different driving conditions. The adjuster features the exclusive Fabtech Port Flow system. Shock fluid is channeled through specific-sized ports between the reservoir and shock body, controlling the compression forces of the shock as it cycles. Each detent provides a different-sized port for the fluid to pass through. Also new for 2015 is that all Dirt Logic shocks feature a 304 stainless steel body and black NitroSteel piston rod for maximum corrosion resistance.

**FABTECH**  
877.432.2832  
fabtechmotorsports.com



## ICON VEHICLE DYNAMICS

Icon Vehicle Dynamics offers a slew of bolt-on high-end aftermarket shock applications for Dodge, GM, Ford, Jeep, Nissan, Toyota, and other international models. Newest in the lineup are the 2½-inch vehicle-specific coilover shock with a Compression Damping Control Valve (CDCV), the 2½-inch vehicle-specific Omega Series two-tube bypass shock, and the 2½-inch vehicle-specific piggyback or remote-reservoir shock with CDCV. Each shock is made here in the USA. They feature precision-honed steel shock bodies with corrosion-resistant CAD plating, FK rod end bearings, and are user tunable and rebuildable. Icon bypass shocks offer compact tube design with infinite tube clocking positions for ease of fitment on modified vehicles and tool-free adjuster knobs with defined detents for easy adjustments. The company also offers universal 2 and 2½-inch shocks for custom applications.

**ICON VEHICLE DYNAMICS**  
951.689.4266  
iconvehicledynamics.com



## KING SHOCKS

In addition to a full line of race and enthusiast smooth-body, coilover, air, and bypass shocks, King offers high-performance bolt-on shocks for many popular applications. The latest is the '15 Chevy Colorado OEM Performance kit, which includes two front 2½-inch remote-reservoir coilover shocks and two rear 2.5-inch piggyback reservoir shocks. The shocks are specifically tuned for on- and off-road use. They are 100 percent bolt-on and require no cutting or welding to mount. The standard front kit increases ride height by 2 inches to allow for larger tires and serves as a leveling kit. The front kit also increases wheel travel by 12 percent. The rear wheel travel is increased by 15 percent. An extended-travel version of the front shock is also available for use with an upper arm kit. These front shocks increase wheel travel by 23 percent.

### KING SHOCKS

714.530.8702

[kingshocks.com](http://kingshocks.com)



## ORI STRUTS

The STX from ORI Struts is more than just your typical air shock. STX struts are compact, internally bypassed, nitrogen-charged long-travel suspension systems. The lightweight struts are said to be designed to handle a high load capacity and control body roll. Each strut features a dual pressurized chamber and other internal features that are said to provide stability in fast turns and on off-camber side hills. The design is said to allow most users to eliminate sway bars, external bump stops, and limiting straps. Each STX strut can be easily tuned by simply adjusting nitrogen gas pressures. Available in lengths from 8 to 20 inches of travel, the STX struts can support up to 1,900 pounds each. The STX Strut is velocity-sensitive with seven-position externally adjustable rebound damping. They feature an internal hydraulic bumpstop on the compression stroke, a hydraulic end-of-stroke cushioning at full extension, cooling fins to dissipate heat, a massive 1¼-inch piston shaft, and 5,000-psi seals. Both 1/2-inch and 5/8-inch mounting points are available.

### ORI STRUTS

770.258.1554

[oristruts.com](http://oristruts.com)



## PRO COMP

The new Pro Comp Pro Runner Black Series shocks are arguably the most advanced shocks that Pro Comp has ever offered. Each shock is a handcrafted assembly. The Black Series smooth-body shocks are 2 inches in diameter, and the coilovers feature massive 2¾-inch bodies. Both models have black anodized aluminum endcaps, a bright zinc plating with a UV protecting clear top coat, and are finished off with a gloss polyurethane clear for added protection against the elements. Other features include Viton O-rings and NitroCarb shafts. Coilovers include coil springs. Both the coilovers and smooth-body shocks are completely rebuildable. Current applications include '07-'15 GM ½-ton pickups, '09-'13 Ford F-150s, '07-'15 Toyota Tundras, and '05-'15 Toyota Tacomas, with shock valving and spring rates customized specifically for each application.

### PRO COMP

800.776.0767

[procompusa.com](http://procompusa.com)



## PURE PERFORMANCE

Pure Performance offers 2-inch-diameter fluted-aluminum smooth-body Prodigy shocks; 2.625 and 3.25-inch-diameter fluted aluminum smooth-body and coilover Prodigy shocks; and 2.625-inch-diameter Prodigy bypass shocks, as well as bolt-on Direct-Fit applications for Ford and Ram trucks. The fluted aluminum body is said to reduce weight without sacrificing strength. The fluting also increases the surface area for improved cooling. The shock bodies are treated with a military-grade hard-anodized coating to fend off corrosion. The shafts are made from massive ¾ or 1-inch Nitrotec Steel or 1-inch polished 17-4 PH stainless steel, depending on the shock model. All Pure Performance Prodigy shocks come with a six-month warranty against defects in materials and workmanship.

### PURE PERFORMANCE/PRODIGY

518.270.9822

[pure-performance.biz](http://pure-performance.biz)





## RADFLO

Radflo offers a full line of smooth body, coilover, air, and bypass shocks. The company also offers bolt-in OE replacement shocks for many different production domestic and import vehicle applications, including the new two-tube bypass shocks for the '07-current JK Wrangler. Radflo OE replacement shocks feature an SSID alloy steel tube, a mirror-polished Nitro Steel rod, rebuildable seals, CNC-machined 6061 or 7075 aluminum body caps and eyelets with black anodizing, and optional finishes including a mirror polish, clear cadmium plating, and chrome. Other new Radflo shock items include the Stealth Bypass series dressed in all black and the Radflo high- and low-speed adjusters, which are available on several different model shocks.

**RADFLO,**  
714.965.7828  
[radflo.com](http://radflo.com)

## RANCHO

Rancho recently released a new larger RS5000X shock series that helps deliver precisely controlled off-road performance to lifted trucks and sport utility vehicles found around the globe. The new RS5000X shock series includes Cross-Tuned Technology, a new, unique valve design that allows for increased control and consistent ride profile with a larger shock body. The new Rancho RS5000X shock series has a large 2.25-inch diameter reserve tube that delivers greater oil capacity and can enhance overall performance. The new RS5000X also has a 16mm nitro-carb rod, is gas pressurized to help minimize foaming and shock fade. All Rancho RS5000X shocks carry a Limited Lifetime Warranty in North America.

**RANCHO**  
734.384.7804  
[www.gorancho.com](http://www.gorancho.com)



## ROCK KRAWLER

Rock Krawler offers up a fleet of high-end RRD shocks. The RRD 2-inch-diameter shocks are available in fluted-aluminum smooth-body and 2.625-inch-diameter fluted aluminum smooth-body and coilover versions. Bolt-on 2-inch applications for most new-model Jeeps are also available. The flutes machined into the aluminum shock bodies are said to increase the cooling surface area and reduce overall weight without affecting the strength. Each shock body is treated with a military-grade hard-anodized coating for corrosion resistance. The RRD shock shafts are made from 3/4- or 1-inch Nitrotec Steel and the RRD race shocks are plugged with a 1-inch polished 17-4 PH stainless steel shaft. A six-month warranty against defects in materials and workmanship is included with every Rock Krawler RRD shock.

**ROCK KRAWLER**  
518.270.9822  
[rockkrawler.com](http://rockkrawler.com)

## SWAY-A-WAY

Along with a full line of length-specific universal off-road race-style shocks, Sway-A-Way now offers bolt-in high-performance shocks for several applications. These include the '14-'15 Ford F-150. The Sway-A-Way 2½-inch-diameter remote reservoir coilovers for the '14-'15 Ford F-150 provide up to 2 inches of lift. They are designed to level the truck and are said to provide a comfortable ride on- and off-road. The F-150 coilovers come with a zinc-plated 4142 bar pin and Grade 8 hardware. Also new at Sway-A-Way are custom colors for the entire shock lineup from race shocks to OEM fitment shocks.

**SWAY-A-WAY**  
818.700.9712  
[swayaway.com](http://swayaway.com)







# THE SAND SPORTS SUPER SHOW

**EVERYTHING YOU NEED FOR FUN IN THE FALL**

**WORDS** MATT EMERY // **IMAGES** MATT EMERY & DEANNA SCANLON

**W**ith the fall off-roading season only days away, the 2015 Sand Sports Super Show rolled into Orange County Fairgrounds September 18-20, 2015, for three days of food, folks, and fun; oh and one of the biggest selections of the hottest off-road parts to be found.

Over 150 companies were there to tempt the assembled with everything from vintage Bugs built to today's technology to wheels, tires, lights, and UTVs—lots and lots of UTVs. Huge outfits such as Chaparral and Burt's seemingly brought their entire stores out as UTVs, riding gear, and parts were abundant.

Most of the major builders were there as Yamaha, Kawasaki, Arctic Cat, and

Polaris had their latest models on hand for everyone to drool over. Arctic Cat debuted their new Robby Gordon Edition Wildcat, and it was sweet. There was a bunch of Yamaha's new YXZ 1000R's in various booths and enough performance parts for the Polaris that a full-race or play-ready RZR XP1000 was but a check-book away.

Speaking of Gordon, he and his traveling circus of heavy hitters were racing in his Speed Energy Stadium Super Trucks both Friday and Saturday nights. The racing was great and on Saturday Gordon's drivers gave us journalists a few hot laps around the combination dirt/pavement course. It was a blast.

This was fun for the whole family as

bands played, kids played in the water, and folks of all ages were tempted by huge corn dogs, turkey legs, and churros (our favorite). There was beer flowing and games of chance were happening. Companies really want you to win, so they can give you free stuff. We love that and it seemed that the attendees did too. If you were looking for a toy hauler, then this was the place to be too, as there were literally hundreds on display.

For 17 years, the off-road faithful have been making the trek to Costa Mesa for the SSS. Not that it's much of a hardship. The cool ocean breezes make this one show that's not to be missed. Of course, you'll have to wait until next year, but mark you calendars now! **DS**



**BELOW:**

We love that the Sand Sports Super Show gives away free programs for the show. It has a complete vendors list and maps of where everyone is.



**ABOVE:**

Ford had a huge display showing off their latest trucks.



**ABOVE:**

It seems these three are ready to ride!

**BELOW:**

Arctic Cat debuted their new Robby Gordon Edition Wildcat. It has everything on it that RG himself recommended, so you know that it has to be a fine rig.



**ABOVE:**

What would a show be without the King Shocks booth?



**ABOVE:**

The weather was warm, and these kids found relief in the water fountain.



**RIGHT:**

Kibbetech had this killer Chevy 2500 in the KC HiLites booth. Look for a feature on this truck very soon.





## THE SAND SPORTS SUPER SHOW



**ABOVE:**  
Rigid Industries had not only a great selection of LEDs on hand, they also had "Ballistic" BJ Baldwin's killer Chevy too.



**ABOVE:**  
One of the neatest things we saw was this Rugged Radios "Baja Bug" that is actually a Polaris RZR. We want one bad.

**RIGHT:**  
Journalists who had attended the Robby Gordon Edition Arctic Cat Wildcat were given rides on the Stadium Super Trucks course. It was fun.



**BELOW:**  
Louie from LGE/CTS had his pristine Bronco out. Again, look for a feature on this rig soon.

**ABOVE:**  
S&B Filters had their cool new Particle Separator on hand. Look for a test on it in this issue.



**ABOVE:**  
She loves her some UTV.



**ABOVE:**  
Playtech Racing makes these sweet Manx replicas. Of course, they have total off-road suspension and new powertrains, so they go as fast as they look.





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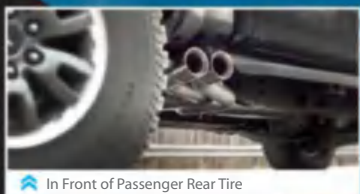
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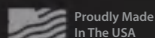
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# POLARIS' NEW ACE 900

**THINK MIDGET RACER FOR OFF-ROAD**

**WORDS** BRUCE SMITH  
**IMAGES** BRUCE SMITH  
AND LARRY WALTON





**ABOVE:**

The '16 ACE 900 SP in Stealth Black has an MSRP of \$11,499.

**BELOW:**

The intake systems has been changed on the ProStar 900 so the filter sits high in the 900 SP's bed, keeping it clear of potential water ingestion in situations like this.



**ABOVE:**

The single-seat, sit-in design of the ACE places the driver in the center of the machine while the full ROPS cage provides added protection. Intuitive automotive-style controls will be familiar to newer operators.

**BELOW:**

Independent A-arm rear suspension is the same as the older ACE models with 9.5 inches of travel. The rear sway bar in the 900 SP is now one-piece, and the rear coils are of a new dual-rate design to better accommodate the more powerful, heavier ProStar 900 engine.



**RIGHT:**

A nice front/rear weight bias helps keep the Polaris ACE 900 SP on a more level plane when it catches air compared to the less powerful ACE models.



It was a short, steep climb. Narrow. Twisty. Rutted. Muddy. Just the fun little section of off-road trail that begs to be challenged. A stab of the throttle and a few seconds later I crested to top of the Tennessee back-country ATV trail with mud slinging off all four wheels that were now grabbing at nothing but a couple feet of air.

The suspension sucked up the landing and a flick of the wheel kept everything under control while I dodged between trees and rocks as the trail continued up the mountain.

That's the new Polaris ACE 900. It's surprisingly fast, agile, and capable—and true adrenaline rush to drive.

Of course, what wouldn't be when you slide a 60hp ProStar four-stroke in a 900-pound off-road go-kart, which is essentially what Polaris has with the newest offering in the expanding ACE lineup.

The ACE 570XP was fun to drive. But it lacked that kick when you nailed the throttle; it had to be run hard to feel sporty. Not so with the ACE 900. It has 15 more horses and a lot more torque than the 570, so now there's probably more power on tap than anyone but a seasoned racer would be able to utilize to the fullest.

What's different between the sporty ACE 570XP and the ACE 900 goes deeper than just shoehorning in the ProStar 900 (the original engine on the Ranger SP.)

"One of the first things our test riders agreed on was the [ACE] 900s need for a front sway bar," says Jeff Lovold, ACE Systems Engineer, as we took a walk around the machine I'd been driving over the miles of trails in the Brimstone Recreation Area.

Lovold says the torque of the 900 engine would lift a front wheel off the ground any time you'd power out of a corner. Not a good thing on a short wheelbase, narrow machine unless you like racing midgets and modifieds.

So the Polaris' engineering team added a solid steel front sway bar to keep both front wheels working in unison as the machine dives into a corner and



## POLARIS' NEW ACE 900

powers out. They also redesigned the rear sway bar that was already on the ACEs, removing the slip-tube version and replacing it with a solid one to further stabilize the handling.

The front and rear spring rates have also been changed slightly to accommodate the heavier engine and front/rear weight ratio, which is now close to 50/50, which makes this machine fun to air out. Even though the new ACE is about 80 pounds heavier than the 570XP model, it lands with far less nose-down attitude than its less powerful sibling.

The new machine still rides a bit on the rough side. Fortunately the nice, deep bucket seats help absorb some of

the jostling of off-road driving, and the bolsters and automotive-style seatbelt keeps you steady as you play with the power underfoot.

Getting all that power to the ground was also a challenge. They had to tighten up the front differential so now the automatic all-wheel-drive system locks up much faster than those in the smaller-horsepower ACEs.

"Once the high-performance front-drive system in the 900 senses the slightest wheel slip in the rear, the 'close-ratio' differential locks the front axles to give maximum traction," Lovold says.

Another change: a RZR-style air intake. The "bed" of the ACE 900 is slightly taller

in front to accommodate the air filter that now sits tucked up high behind the seats. The rear plastic is shorter at the rear to allow more air to flow out from under the back of the cargo area so the engine can cool better.

Then there's the ACE 900s throttle, which is now drive-by-wire, giving a much smoother and quicker-responding feel under foot.

Other than those changes, everything else remains the same as the other ACEs in the line. The '16 ACE 900 is a really fun off-road machine to drive and would be a total blast in the open desert or dunes where the power and nimbleness could really be put to use. **DS**



**ABOVE:** Electronic power steering (EPS) on the SP and its short wheelbase make it easy to drive in more demanding conditions like slippery ATV trails lined with trees and other obstacles.

### BELOW:

The front differential is what Polaris engineers refer to as a "close-ratio, high-performance" version that locks the front driving wheels whenever the AWD system senses the slightest rear wheel slip.



### ABOVE:

The ACE 900 SP is fitted with a full-length skidplate and sports 10.5 inches of ground clearance on its 48-inch track. This gives it an off-road advantage over longer, wider ATVs and side-by-sides.



**ABOVE:** The air filter in the SP 900 sits high in the front of the plastic cargo box and is accessed by lifting up the snap-in plastic panel that's part of the box floor.

### BELOW:

Another addition on the new ACE 900 SP is a solid front sway bar to improve stability under power and hard braking. It's mounted to special brackets welded to the frame.



### ABOVE:

Half-doors with reinforcing tubing and the rollcage are standard features on the 900 SP. Getting in and out of the machine from either side is easy.



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comp at \$369.99

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WORDS AND IMAGES // JAY KOPYCINSKI

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Tire punctures happen in rocks, roots, remote cattle guards and anything else lurking that might poke through your

tire carcass. Field repair can save you time and headaches, depending on your location and spares availability. Tire plugging is often an option, assuming you're carrying an air source to refill the tire. A plug kit is a good thing to have and often a quick solution to many trail punctures.

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## DS KOPYCINSKI'S BRAIN

to be running standard wheels and want to run low air pressures, look for wheels that have a relatively wide bead seat that can do a better job of keeping the tire on the outer wheel bead.

Sooner or later you're bound to encounter a tire that comes unseated from the outer wheel bead. They can often be reseated if you have a healthy air supply to quickly fill the tire and push the tire bead back in place on the wheel.

Essentially, you spray some flammable liquid into the tire carcass, and then ignite the liquid with a match. The resulting combustion heats the air inside the tire and expands it outward onto the wheel bead. We warn you to use this method with caution. The internal gases get hot and you need to jump in quick to inflate the tire with air before it collapses off the bead again. In any case, one should be mindful to protect their hands and eyes any time a tire is being popped back onto the wheel seat. **DS**



**ABOVE:** Reseating a blown outer tire bead can be a chore, but there are a few tricks. First, jack up the rig to get the tire off the ground. Make sure the unseated bead area is clean of debris. If the inner tire bead is still seated, pull the tire outward toward the outer bead. Multiple hands working around the tire circumference help here. Zapping it with a healthy dose of air from a good-sized compressor or CO2 tank while holding the tire will often start pushing the tire back on the outer bead for a seal. If the inner bead has unseated as well, things get tougher. Use of a heavy-duty ratchet strap tightened around the centerline of the tread can help bulge the tire back out toward both wheel beads.

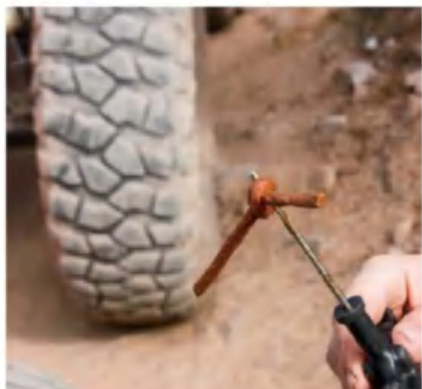


### LEFT:

Most anyone going to remote areas in the dirt should carry a tire plug kit. In its simplest form this consists of a hole reamer, plug insertion tool, and tire plugs. It's cheap insurance when your spare is useless, or you need a quick fix without removing the leaky tire. More comprehensive kits have better quality tools, longer plugs, and other repair materials such as side-wall sewing wire. Of course, you'll need an air source to refill the tire after repair. Consider the pros and cons of owning an onboard air compressor versus a refillable CO2 tank, or have one of each.



## FIXING OFF-ROAD TIRE FLATS



### ABOVE:

Many people will simply thread a tire plug through the insertion tool and slip the plug into the offending hole in the tire. After some time and tire flexing, plugs can be ejected out of the carcass if you have more than just a small hole, leaving you with a leak once again. One trick is to tie a knot in the plug when plugging larger holes to help prevent the plug from slipping back out of the tire. Slowly work the knotted plug into the hole in the tire, then extract the insertion tool with a quick jerk backward.



### ABOVE:

Sidewall slashes can present their own issues and will rapidly deflate a tire. We've seen some pretty impressive plug jobs using multiple plugs to seal good-sized rubber slashes. Just keep adding plugs (a knot may help) along the cut line until the slash is filled. Granted, this is not a recommended solution for high-speed or highway running on such a sidewall-plugged tire, but it should get you back to camp or a trailer. Also, a sidewall slash may not mean your expensive off-road tire is toast. For those using tires for slow off-road-only pursuits, one option for tire repair is to have farm or industrial tire shop vulcanize a rubber patch to the tire to repair the slash cut.

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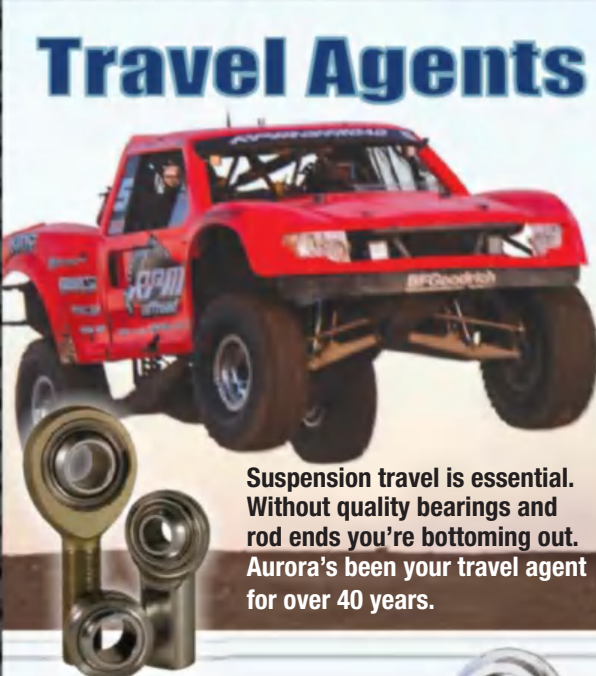
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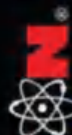
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Second Place winner of the main event Robert Itzaina and James Houch (foreground) go wheel to wheel with Orrin Nordin at Riverside International Raceway in September 1975.

It started out as the “workingman’s class” of racing. The idea was to keep cost down so that almost anyone could go racing with SCORE.

Another premise was that you could go racing on the weekend, and then drive home in your VW Sedan Class 11 race car. That’s to say if you hadn’t had your fenders and bumpers removed by banging into your competitors, and you still had four wheels touching the ground.

The debut of the class was held at Riverside Raceway during the 1975 SCORE-Delco World Championships. A special low entry fee was also part of the package to enter this Class 11 event, which started in the daylight and ran into the dark hours.

A little background to this scenario: The gas “crisis” had passed earlier that year. Those were the days of even/odd days gas fill-ups, and news reports blared uncertainty whether the U.S. would get enough foreign fuel to keep things and cars running. The Baja 500, the previous race on the ’75 SCORE schedule, which had been slated for June, had been canceled because of gas rationing.

Even auto racing itself was being called unnecessary.

So the stage was set with Class 11 as

being “cheaper” racing with more race miles per gallon,


To quote from the official event program: “The class is for any year VW type I sedan or sunroof models ... only a few changes are allowed ... but the engine, body, and suspension all must be stock and for the year the car was made. Any make shock absorbers are allowed but only stock mountings, and one shock per wheel. Rollcages are mandatory. The cost is small and a premium will be put on driver skill, since all the vehicles are quite similar.”

A noble thought, for sure, but if someone can stretch the rules in racing, they will. A look at how NASCAR, NHRA Drag racing, and even go-kart racing has changed over the years, with construction rules changing year by year and how it has become crazy expensive.

But what year VW would be the best to make into a racer? Older cars with smaller 1,200cc engines were supposedly more reliable and had lower gear ratios, but most went with the later models with 1,500cc engines, and some ran the 1,600 dual port, fuel-injected setup. Sounds easy enough, but remember, you had to run the same type stock engine and running gear as your car came from at the Wolfsburg, Germany, factory.

On that warm Saturday night, after the big boys (and girls) had run their heats, 25 freshly painted and prepped VWs took the start flag. A lot of body-to-body contact, a lot of paint removed, but at the end of the conflict, Johnny Johnson, at a young 32 years of age, took the checkered flag, with Ron Muller as codriver. They were in a ’67 1,500cc Bug, with Bob Itzaina and James Houch taking a close Second Place, also in a ’67.

Other off-road racing luminaries were entered in the race, but didn’t finish. Mickey Thompson, Class 6 champion Dick Lee, and Steve Kelley entered the fray, all most likely as a morale and promotional support for the new class and SCORE’s new boss Sal Fish.

The rule changes over the years have been mainly concerned with reliability issues to keep the Bugs in the race as long as possible. But despite challenges to the rules, the Class 11 rules have remained relatively stable with small subtle modifications over 40 years. With only a two or three entrants per race, the class has shrunk somewhat lately but Class 11 is still a great and inexpensive way to go racing. 

*Vaya con Dios*  
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